

## aluplast and BASF jointly present energy-efficient window frame profiles with thermoplastic reinforcements made of Ultradur®

### Case Study

The German window system manufacturer aluplast is launching a window system that is highly thermally insulating as well as cost-effective, thanks to a version of Ultradur® High Speed (PBT) which BASF developed especially for this company. This glassfiber-reinforced thermoplastic replaces the steel that is normally used for window frame profiles, thus providing much better heat-insulating features without changing the mechanical properties of the windows. The new profiles do not only save time-consuming and costly work steps for window manufacturers but also weigh 60 percent less than their predecessors of metal.

Two flat strips made of Ultradur® are extruded into the new window profile, replacing the metal profile that is usually heavy and difficult to install. The U-value (formerly “k-value”: heat transfer coefficient, thus a parameter for thermal-insulation capacity) of the window frame profiles using the flat Ultradur® strips is improved by about 20 percent, namely, to  $1.1 \text{ W}/(\text{m}^2 \cdot \text{K})$ , in comparison to the standard versions that contain a steel profile.

The Ultradur® strips are optimally positioned and permanently anchored in the plastic profiles by means of extrusion. The flat plastic strips also ensure that the window frame profiles are 60 percent lighter in weight, which makes transport and installation easier as well.

